

## REMARKS

In view of the above amendments and the following remarks, further examination and reconsideration of the rejections in the Office Action of October 6, 2008 are respectfully requested.

In item 2 of the Office Action, claims 22, 24, 25, and 27-31 are rejected under 35 USC § 102(b) as being anticipated by US 2002/0153246 (Wang); in item 3 of the Office Action, claims 32 and 33 are rejected under 35 USC § 102(e) as being anticipated by US Patent 7,294,244 (Oberlitner); in item 4 of the Office Action, claims 35-39 are rejected under 35 USC § 102(e) as being anticipated by US Patent 6,875,333 (Sakaki); in item 7 of the Office Action, claim 23 is rejected under 35 USC § 103(a) as being unpatentable over Wang; in item 8 of the Office Action, claims 22, 26, and 34 are rejected under 35 USC § 103(a) as being unpatentable over Oberlitner. These rejections are inapplicable to the amended claims for the reasons below, and withdrawal of the rejections is requested.

### I. Regarding independent claim 22, and claims depending therefrom

In item 2 of the Office Action, claim 22 is rejected under 35 USC § 102(b) as being anticipated by US 2002/0153246 (Wang); in item 8 of the Office Action, claim 22 is rejected under 35 USC § 103(a) as being unpatentable over US Patent 7,294,244 (Oberlitner). These rejections are believed inapplicable to amended claim 22 for the following reasons.

Claim 22 recites a plating apparatus having a ring-shaped nozzle pipe for immersing in a plating solution held in a plating tank, the nozzle pipe being disposed in the plating tank and having a plurality of injection nozzles for injecting the plating solution toward the surface of a workpiece to supply the plating solution into the plating tank. This is not disclosed by Wang or Oberlitner.

Wang discloses an electrolytic apparatus (see, for example, Fig. 7B in Wang) wherein the plating solution is supplied into the plating tank via inlets 4, 6, and 8. Wang does not disclose a ring-shaped nozzle pipe disposed in the plating tank, and does not disclose a ring-shaped nozzle pipe having a plurality of injection nozzles for injecting the plating solution toward the surface of a workpiece to supply the plating solution into the plating tank. Thus, Wang does not disclose a ring-shaped nozzle pipe as recited in claim 22.

Oberlitner discloses a workpiece processing tool (see, for example, Fig. 6 in Oberlitner), having a nozzle 57 for injecting plating solution into the plating tank. However, Oberlitner does not disclose a ring-shaped nozzle pipe disposed in the plating tank, and does not disclose a ring-shaped nozzle pipe having a plurality of injection nozzles for injecting the plating solution toward the surface of a workpiece to supply the plating solution into the plating tank. Thus, Oberlitner does not disclose a ring-shaped nozzle pipe as recited in claim 22.

Thus, the combined disclosures of Wang and Oberlitner do not suggest the present invention as recited in claim 22. It is submitted that claim 22 is allowable over the prior art of record, as are claims 23-31 depending therefrom.

## II. Regarding independent claim 32, and claims depending therefrom

In item 3 of the Office Action, claim 32 is rejected under 35 USC § 102(e) as being anticipated by Oberlitner.

Claim 32 recites a plating apparatus having a stirring vane having irregularities on at least one side thereof for generating swirls in the plating solution when the stirring vane is reciprocally moved, the irregularities comprising a succession of triangular or rectangular saw-tooth irregularities, or a number of narrow grooves defined at predetermined intervals. This is not disclosed by Oberlitner.

Oberlitner discloses (see, for example, Figs. 16 and 17 of Oberlitner) a workpiece processing tool having a vane or paddle 132. However, Oberlitner does not disclose that the vane has irregularities on at least one side thereof for generating swirls in the plating solution when the stirring vane is reciprocally moved, the irregularities comprising a succession of triangular or rectangular saw-tooth irregularities, or a number of narrow grooves defined at predetermined intervals.

Thus, Oberlitner does not disclose a stirring vane as recited in claim 32. Accordingly, it is submitted that claim 32 is allowable over the prior art of record, as are claims 33 and 34 depending therefrom.

## III. Regarding independent claim 35, and claims depending therefrom

In item 4 of the Office Action, claim 35 is rejected under 35 USC § 102(e) as being anticipated by US Patent 6,875,333 (Sakaki).

Claim 35 recites a plating apparatus having a plurality of stirring vanes actuatable by respective independent drive mechanisms, the plurality of stirring vanes having respective edges which are aligned with each other to keep stirring surfaces of the plurality of stirring vanes in alignment with each other. This is not disclosed by Sakaki.

Column 2, lines 37-40, of Sasaki discloses a rotating disk with a plurality of impellers. The impellers are attached to the disk, and thus would not be actuatable by independent drive mechanisms but would be driven together. Thus, this does not disclose the plurality of stirring vanes as recited in claim 35.

Sakaki discloses (see Fig. 7) a plurality of stirring vanes (a first stirrer 41 plus a second stirrer 80 having a plurality of L-shaped stirring vanes). However, as can be seen in Fig. 7, the plurality of stirring vanes do not have respective edges which are aligned with each other to keep stirring surfaces of the plurality of stirring vanes in alignment with each other.

Further, all the L-shaped stirring vanes in Sakaki (see column 11, lines 47-61) are attached to the second stirrer, and the second stirrer is gear-driven by external gear 51b via ring-shaped gear 81. External gear 51b also drives first stirrer 41 via the driven gears 52 (see Fig. 2, and column 7, line 59, to column 8, line 12). Thus, the plurality of stirring vanes are *not* actuatable by respective independent drive mechanisms, but are driven by same shaft.

Thus, Sasaki does not disclose or suggest the present invention as recited in claim 35. Accordingly, it is submitted that claim 35 is allowable over the prior art of record, as are claims 36 and 37 depending therefrom.

#### IV. Regarding independent claim 38, and claim 39 depending therefrom

In item 4 of the Office Action, claims 38 is rejected under 35 USC § 102(e) as being anticipated by US Patent 6,875,333 (Sakaki).

Claim 38 recites a plating apparatus having a stirring vane mounted on a rotational shaft and reciprocally movable parallel to the surface of the workpiece to stir the plating solution, wherein the stirring vane is operable to form an angle with respect to the surface of the workpiece which is variable as the stirring vane reciprocally moves and the direction in which the stirring vane moves is changed by angular movement of the rotational shaft. This is not disclosed by Sakaki.

Sakaki discloses a stirrer 41 which moves *only* in a direction parallel to the surface of the

workpiece (column 8, lines 24-27). In order to change an angle *with respect to the surface of the workpiece* there must movement in a direction *not* parallel to the surface of the work piece (i.e. rotation or translation out of the plane). The angles depicted in Figures 3a-3e, and referenced on page 5 of the Action, are *not* with respect to the surface of the workpiece; workpiece W does not appear in Figures 3a-3e. The angles of Figures 3a-3e are with respect to the pedestal body 51a (see Figures 2 and 3a-3e).

Thus, Sasaki does not disclose or suggest the present invention as recited in claim 38. Accordingly, it is submitted that claim 38 is allowable over the prior art of record, as is claims 39 depending therefrom.

In view of the foregoing amendments and remarks, it is respectfully submitted that the present application is clearly in condition for allowance. An early notice thereof is earnestly solicited.

Respectfully submitted,

Fumio KURIYAMA et al.

By: 

Aldo A. D'Ottavio  
Registration No. 59,559  
Agent for Applicants

AAD/JRF/kh  
Washington, D.C. 20006-1021  
Telephone (202) 721-8200  
Facsimile (202) 721-8250  
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